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ABSTRACT

A study investigated the relative effects of ownership opportunities and instructional support on high school students' engagement with assigned writing topics. Subjects, 66 eleventh graders enrolled in five United States history classes, experienced three instructional conditions, writing on one of three topics in each one. The instructional conditions were: ownership opportunities/no instructional support; instructional support/no ownership opportunities; and ownership opportunities/instructional support. Data were also collected on students' self-efficacy, topic-knowledge organization, task-related persistence, behavior, essay characteristics, and students' responses to the instructional/writing episodes. While the results emerging from this study were highly complex, the major finding indicated the importance of instructional support in explaining the students' writing-task engagement. Students were more persistent, more reflective, expressed less self-doubt and greater interest when instructional support was high. (Two figures and four tables of data are included. Fifteen references are attached. An appendix includes the self-efficacy and student response questionnaires.) (SR)

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The Effects of Control Opportunities and Instructional Support on High School Students' Writing Task Engagement

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RUNNING HEAD: Control and Support

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The Effects of Control Opportunities and Instructional Support on High School Students' Writing Task Engagement

The 1980's buzz word in the field of writing instruction is ownership. Student writers must be allowed to take ownership of their written work in order for them to invest energy and effort in their academic writing tasks, or so the contemporary wisdom of the field suggests (Atwell, 1987; Graves, 1983; Hudson, 1986). Interestingly, the ownership construct has much in common with the notion of control, as conceptualized by theorists in the field of human motivation (deCharms, 1968; Deci, 1975; Deci and Ryan, 1985). Opportunities to take control of academic tasks, to function with self-determination and purpose, frequently have been found to influence students' task-related engagement in a positive manner (Stipek and Weisz, 1981). Therefore, theories of human motivation lend some support to the current focus on student ownership of written work.

What has been less evident in the discussion about students' levels of engagement with their writing tasks is the companion construct to control in the motivation literature, namely competence. As motivation theorists know, having opportunities to take control of a given task or situation is not sufficient to insure high levels of task-related engagement. In addition to control opportunities, individuals must also perceive themselves as being capable of exercising those control opportunities successfully (Bandura, 1982; Deci, 1975; Locke, Frederick, Lee, and Bobko, 1984). Theoretically, then, extending student

writers' ownership opportunities will not insure their high levels of engagement with writing tasks. Those writers must also perceive themselves as being capable of completing the writing task successfully.

One reason practitioners, researchers, and theorists in the field of writing may have overlooked the importance of perceived competence in explaining students' engagement with writing tasks is that ownership opportunities typically have been operationalized as topic choice (Atwell, 1987; Graves, 1983). That is, teachers extend ownership opportunities to their students by allowing them to choose the topic about which to write. While choosing a topic is obviously one way to take control of a writing task, it is by no means the only way to take control of a writing task. Very conceivably, students can be assigned a topic (e.g., the presidential campaign of 1988) at the same time that they are encouraged to take ownership of the task by articulating and defending a personal opinion (e.g., Dukakis would have made the better president.)(Langer and Applebee, 1986).

Perhaps, students' perceived competence is less likely to be an important variable in explaining students' writing task engagement when students choose their own topics on which to write because they almost certainly will choose topics about which they feel competent to write. Perceived competence, in other words, is probably a given, high for all student writers

when they choose their own topics. When, however, they have been assigned a topic and then encouraged to take personal control of their written response to that assigned topic, then perceived competence is likely to be more variable, and, therefore, a more important factor in explaining students' writing task engagement. Students whose self-perceived writing competence is low may, in fact, be more highly engaged with tasks that provide them with a great deal of instructional support than with tasks that afford them ownership opportunities. The study reported in this paper is an investigation into the relative effects of ownership opportunities and instructional support on high school students' engagement with assigned-topic writing tasks.

METHOD

Participants

The 191 participants in this study were 11th graders enrolled in six U.S. history classes in a suburban school located in a major metropolitan area. With the exception of a small group of honors students and non-mainstreamed special education students, the full range of the 11th grade population was enrolled in these classes. Three teachers taught these classes, each teacher being responsible for two of the six classes. During one of the writing periods, one teacher had his students write on the wrong topic; therefore, that class of 33 students was dropped from the study. In addition, 92 students, who were not present on one or more of the eight data-collection days,

were also dropped from the study. The total number of students for whom complete data were available was 66.

Design

This study employed a repeated-measures, counterbalanced treatments design. Each of the 66 participants experienced each of the three instructional conditions. In order to control for sequence effects, all six of the possible instructional-condition sequences were used, with each class being randomly assigned one of the six sequences. Because the same topic could not be repeated for each instructional condition, three topics similar in terms of domain and experiential demands were used in the study. Again, in order to randomize possible sequence effects, all possible sequences of topics were used, each one being randomly assigned to one of the six classes. For each group, then, the three writing tasks they were asked to complete were some combination, randomly determined, of the three topics and the three task conditions.

In addition to the within-subjects factor of instructional condition, between-subjects factors included teachers and the students' reported levels of writing self-efficacy (or perceived competence); the students' topic-knowledge organization was used as a covariate to control for pre-study differences in the students' familiarity with the topics.

Instructional Conditions

The following three instructional conditions were delivered to each participant in the study.

Ownership opportunities/no instructional support. In this condition the teachers gave their students a writing assignment without providing any class lessons regarding the assigned topic. Thus, the students were free to take whatever stance they wanted to on the topic (ownership opportunities), but they were given no assistance in developing that stance (no instructional support).

Instructional support/no ownership opportunities. In this condition the teachers lectured to their students on one of the three topics. Each teacher received a prepared outline to use as a guide while delivering the lecture. The students received a skeleton version of this same outline. The writing assignments about the topic of the lecture followed the next day. The students were encouraged to use their notes to assist in their writing. Thus, they were given assistance in understanding the topic about which they wrote (instructional support), but they were encouraged to do no more than accept the information their teacher provided in the lecture, fitting into a predetermined structure (no ownership opportunities).

Ownership opportunities/instructional support. In this condition the students participated in a class discussion on one of the three topics. The procedures for this discussion were modeled on Langer's pre-reading instructional strategy known as

PReP (Langer, 1982; Langer & Purcell-Gates, 1985). The focus of the discussion was a list of concepts related to the targeted topic. The teacher elicited student responses to these concepts, putting all student thoughts or ideas on the board as they were offered. After the students finished offering their thoughts, the teachers asked each student who offered an idea to explain what made him or her think of it. Finally, the students were allowed to amend or elaborate upon their initial contributions. The students were encouraged to add their own ideas, as well as those of their peers, to the prepared list of concepts targeted for the discussion. A writing assignment about the topic of discussion followed on the next day. The students were allowed to use their discussion notes to assist in their writing. Thus, they received some assistance in understanding the topic about which they wrote (instructional support) at the same time that they were encouraged to make their own sense of the topic (ownership opportunities).

Writing Tasks and Topics

The three topics used in the study focused on issues surrounding the dumping of toxic waste, the use of industrial robots, and the crackdown on threats to product safety. The directions given to the students for each writing assignment were delivered verbally (e.g. "Write an essay on toxic waste"). No attempt was made to constrain what the students actually did with the assigned topic, thus allowing them to take their cues about

how to proceed with their work more from the instructional periods that preceded their writing than from the specific directions for the writing tasks.

Data Collection: Independent Variables

Self-efficacy. This paper-and-pencil, self-report instrument provided an indication of the students' perceptions of their own writing competence, both generally and with respect to the specific topics used in this study. Modeled on instruments used by Bandura (1982) to assess self-efficacy with respect to other sorts of tasks, the self-efficacy instrument asked the participants to indicate, by means of a percent score between 0 and 100, how confident they were that they could complete successfully both summary and persuasive writing tasks on the three topics targeted in this study at some predetermined grade level (e.g., A, B, or C) (See Appendix A). The students' self-efficacy scores were calculated by averaging their reported confidence levels across the eight writing tasks described in the instrument. Then the students were designated as having high-, mid-, or low-levels of self-efficacy, the cutpoints for these categories being a half-standard deviation below and above the mean, 55.72 and 76.59, respectively. To estimate instrument reliability, 18 students not involved in the study were administered the self-efficacy instrument twice with a week separating the two administrations. The resulting test-retest correlation coefficient was .79.

Topic-knowledge organization. Topic-knowledge organization was determined by means of Langer's measure of topic knowledge (Langer, 1984; Newell, 1984). It functioned as an indicator of the students' prior knowledge with respect to the three targeted topics, focusing especially on how highly integrated the students' understandings of these topics were. The specific probe for each topic was developed by identifying five concepts deemed central to an understanding of that topic. (For example, the five concepts chosen for the topic of product safety were the Tylenol tragedy, tamper resistant, the Food and Drug Administration (FDA), government intervention, and consumer advocate.) The targeted concepts for each topic were culled from three articles, one focusing on each of the three topics used in this study, published in social science magazines written for a high-school student audience. Before any of the treatments were administered, the students were required to respond as fully as possible to these concepts by writing down everything that came to their minds when confronted with them. Each of their responses was then coded for its degree of organization, using the following three-point scale:

Code	Level	Control and Support Response Elements
3	Highly Organized	superordinate concepts, definitions, analogies, linkings
2	Partially Organized	examples, attributes, defining characteristics
1	Diffusely Organized	associations, morphemes, sound alikes, first hand experience, no apparent prior knowledge

To estimate the reliability of the topic-knowledge scores, two trained raters scored 18 of the topic-knowledge probes, three randomly selected from each of the six classes in the study. Correlation coefficients between the two sets of ratings for topic-knowledge organization were calculated for each topic (Toxic Waste, .96; Industrial Robots, .96; Product Safety, .89).

Data Collection: Dependent Variables

Time spent writing and length of essay. In this study, time spent writing was conceptualized as an indicator of the students' task-related persistence. The students were asked to keep track of how much time it took them to complete each of the writing tasks. At the beginning of the writing sessions, the teachers had their students write down the starting time. When the students completed their essays, they wrote down the time they finished their papers.

In addition, because students can spend much time writing very little, the length of the students' papers was also counted

as being indicative of their task-related persistence. Length was determined by means of a simple word count. Numbers were counted as one word, proper names were counted as one word, and hyphenated words were counted as two words.

Observations of student behavior. While the students were actually writing their essays, an observational assessment of attending behaviors was made. An observer, unaware of the previous day's instructional conditions, collected data on each student during each of the writing periods in a round-robin fashion, moving from one student to the next on a random-interval basis. The observer wrote on a seating chart codes representing the type of behavior each student manifested at the moment of observation. Two of the behavioral codes were later selected to calculate specific outcome variables for this study. The first of these two codes represented task-appropriate behaviors such as writing, reading, and perusing notes, while the second represented task-appropriate behaviors such as pausing to think about the task or reflect on the topic. Because students wrote for different amounts of time, simple frequency counts of these two types of behaviors are not meaningful. Therefore, the scores for each were calculated by dividing the number of observations of reading/writing behaviors or the number of observations of thinking/reflecting behaviors by the total number of observations made for each student. These scores represented proportions of each type of behavior. Observer reliability (ranging from .80 to

.90) was established by calculating the percentage of agreement between two trained observers gathering data at the same time in sample classrooms prior to this study.

Essay Characteristics. Characteristics of the students' essays were used to make inferences about the nature of their goals for each writing assignment. Goal difficulty was assessed in two ways. First, each paper was designated as being characterized by an easy or hard function. Britton's taxonomy of essay functions (Britton, Burgess, Martin, McLeod, and Rosen, 1975) was used to help make this designation. Those functions in Britton's taxonomy that were counted as hard were analysis, theory, and persuasion, each an informational use of writing. Those counted as easy were mechanical uses (three or fewer sentences), informational uses such as reports and summaries, personal uses such as journals and personal letters, and imaginative uses such as play scripts. The criterion used to make this division between hard and easy functions was the degree to which the papers obviously attempted analytical reasoning.

The essays were also coded as having or not having expressions of the authors' self-doubt about their understanding of the topic. When writers expressed self-doubt in their essays, they tended to do so in place of addressing the topic in a thorough and substantive manner. In other words, expressions of self-doubt seemed to function as a sort of excuse for not doing a more thorough job of addressing the topic while writing.

Therefore, the presence of a self-doubting stance toward the topic was counted as evidence of an easy task goal. The following excerpt from an essay exemplifies this self-doubting stance.

> . . . This is basically all the knowledge I have pertaining to this topic. Robots do not interest me to the point that I actually read information about them.

In contrast, the following essay gives no indication that the author doubts his or her understanding of the topic, even if we as readers find reason to doubt it.

> The EPA Identifies and cleans the most hazzardous places. People give them a lot of pressure because the people want to make sure they are disposed of. The laws regarding dumping of toxic waste because they want to ban on dumping of liquors waste in drums but, There was no ban on dumping in both quantities.

Finally, the essays were analyzed to determine the degree to which students chose to advance some of their own beliefs or thinking about the topic in their papers. For example, the following two papers were contrasted according to the presence or absence of the authors' personal opinions about the topic of their papers.

Control and Support

> Toxic waste is a poisionous substance left over from some industrial process. There is an toxic waste problem in every state but New Jersey has more health hazzardous waste than any other state.
>
> As industries of the past grow larger and more complex, industrial robots are replacing the jobs of many humans. I, for one, feel it is unfair to choose a robot over a human because the robot does the job more efficiently. Whereas people need the work to sustain themselves and their families, robots have no need for work. . . .

The writer of the first essay remained personally detached from the topic, using the essay merely to provide factual information about the issue of toxic waste. The writer of the second essay, in contrast, went beyond the details of the issue to make a personal comment about the industrial-robot situation. Essays manifesting personal opinions were counted as evidence of the student writer's taking control of the task to serve some personally meaningful goal.

A stratified random sample of 51 papers was coded by two raters in order to establish the reliability of the primary rater. Three papers were randomly selected from each of the 17 instructional sequences included in the study. The percent agreement between the two raters who coded the papers as having

an easy or hard function was 92 percent. For statements of personal opinion and expressions of self-doubt, the percent of agreement between the two raters was 94 and 78 percent, respectively.

Students' responses to the instructional/writing episodes. A semantic differential was used to collect information regarding the students' attitudes toward the instructional/writing episodes (experienced over a two day period with a lesson on day one and a writing task on day two). The instrument consisted of 20 items and employed a seven point rating scale (see Appendix A). After the students completed each of their essays, they registered their responses on the semantic differential. These data were reduced, using a principal components factor analysis with Varimax rotation. Two factors resulted (Table 1). The factor accounting for the greatest proportion of the variance seemed to capture the students' feelings about the instructional/writing episodes, while the second factor seemed to capture their interest during the instructional/writing episodes. The individual students' factor scores for both of these factors were used as outcome variables in the study. These standardized factor scores were calculated by multiplying the standard scores for each of the original variables by the factor score coefficients.

Insert Table 1 about here.

Analyses

In order to simplify the analyses, the nine outcome variables collected during the course of this study were also factor analyzed, using principal components with Varimax rotation. Four factors resulted, three of them being easily interpretable (Table 2). The variables primarily accounting for the first factor were the time spent writing and the length of essay variables. This factor seems to represent a persistence dimension in the data. The variables accounting for the second factor were the observed student behaviors, writing/reading and thinking/reflecting. This factor seems to represent a task-attentiveness dimension in the data. And the variables accounting for the third factor were the students' expressions of self-doubt and opinions in their essays, as well as their interest in the instructional/writing episodes. Apparently, when these student writers expressed their self-doubt, they also tended to be less interested in the entire instructional episode. Interestingly, these students were also most likely to take ownership of the task by expressing their personal opinions when they felt doubtful about their understanding of the topic, as well as uninterested in the entire lesson. For them, in other words, expressing personal opinions was a strategy they used when

they did not believe they had enough factual information to include in their essays. The fourth factor was not easily interpreted, and therefore, was not used in the remaining analyses. The standardized factor scores for these first three factors became, then, the three outcome variables ultimately used in this study. They were calculated by multiplying the standard scores for each of the nine original variables by the factor score coefficients. The three variables emerging from this data reduction process were analyzed by means of a repeated-measures, three-factor ANCOVA. The students' specific topic-knowledge organization was employed as the covariate to control for variability in the students' prior knowledge of the three topics.

Insert Table 2 about here.

Results and Discussion

The factor analysis of the nine original outcome variables resulted in three usable factors, representing three dimensions of the students' writing-task engagement. For the first factor, representing the students' task-related persistence, high scores suggest that the students were highly persistent. For the second factor, representing the students' task-related attentiveness, low scores indicate that the students spent a relatively large amount of time thinking or reflecting about the task or topic. And the third factor, representing a response on the part of

students to situations in which they did not feel knowledgeable about the assigned topic, high scores indicate a high percentage of students expressing self-doubt and personal opinions in their writings and a general lack of interest in the entire instructional episode. Table 3 presents the means and standard deviations, adjusted for the covariate, for each of the three factors employed as outcome variables, while Table 4 summarizes the results of each repeated-measures ANCOVA.

Insert Tables 3 and 4 about here.

The results emerging from this study were highly complex. To discuss them fully would take more time and space than are available for this presentation. Therefore, rather than fully discussing the results, this paper will briefly describe some of the tentative, but interesting, trends in the data. Then, it will address more fully the single major finding emerging from this study.

Three general findings resulted from these analyses. One is the existence of a significant interaction effect between teacher and instructional condition on the persistence factor ($F = 9.92$, $p < .001$) (See Figure 1). This interaction can be explained largely in terms of the teachers' attitudes toward and familiarity with the three instructional conditions. The one teacher who allowed his students to take intellectual control of

their academic tasks on a regular basis had students who were most persistent in both of the ownership conditions (no instruction and PReP). Similarly, the teacher whose typical instructional and management style paralled most closely the lecture condition had students who were most persistent in the lecture condition. A more extended discussion about the role of these teachers in shaping the effectiveness of the instructional episodes in this study can be found in Spaulding (in press).

Insert Figure 1 about here.

Another finding, one for which the case in this study is more tentative, is the significant interaction between the students' reported levels of writing self-efficacy and the instructional conditions on the students' task-reflective behaviors while writing ($F = 2.54$, $p < .05$) (See Figure 2). Interestingly, this study's original predictions for the mid- and high-efficacy students are a near mirror image of the actual results. Other analyses conducted on the data gathered for this study (i.e., separate ANCOVAS for each of the original nine outcome variables prior to their being reduced into three factors by means of factor analysis) suggest that, indeed, the mid-efficacy students were acting in a manner more consistent with what was predicted for their high-efficacy peers. Mid-efficacy students, in other words, were somewhat more likely than their

peers to respond favorably to control opportunities available in their writing tasks. This unpredicted, and provocative, trend has spawned a series of pilot studies investigating the mid-efficacy students' responses to control opportunities. Each pilot study has lent support to the idea that these students are, in fact, the ones most willing and able to take personal control of their academic tasks. Currently, a major investigation designed to identify relationships between middle and high school students' reported levels of linguistic self-efficacy and their reported desire for personal and academic support from peers and teachers is underway. The major hypothesis guiding this study is that mid-efficacy students are more independent than their low- and high-efficacy peers when it comes to their need for academic support while engaged in various sorts of language-related tasks.

Insert Figure 2 about here.

But the major finding emerging from this study is the importance of instructional support in explaining the students' writing-task engagement. The high school juniors in this study were more persistent ($F = 31.28$, $p < .001$), were more reflective ($F = 6.19$, $p < .01$), and expressed less self-doubt and greater interest ($F = 4.97$, $p < .01$) when the available instructional support was high. Contrary to what might be predicted based upon the current literature on writing instruction, control (or

ownership) opportunities did not appear to contribute to the students' writing-task engagement. Perhaps, when students are assigned challenging topics about which to write, opportunities to take person control of their writing tasks are less important to them than opportunities to acquire the assistance they need in order to perform competently on those tasks.

Interestingly, self-efficacy did not have a primary effect on the students' task-related engagement in this study. Perhaps the three topics chosen for this study were sufficiently difficult that when the students were confronted with the actual writing assignments, even those who originally reported relatively high levels of self-perceived writing competence felt somewhat less efficacious than their self-efficacy scores reflect. Under those conditions, instructional support is likely to be more predictive of high levels of writing-task engagement.

Two other findings in this study lend additional, albeit tentative, support to the idea that instructional support is the most critical contributor to young writers' task-related engagement when they are faced with challenging tasks. First, the significant positive relationship between the students' topic-knowledge organization and their task-related persistence ($F = 5.98$, $p < .02$) suggests that when students' understanding of the topic about which they are writing is well-developed, then they are more persistent writers. A well-developed understanding of a topic is certainly something promoted by means of

appropriate forms of instructional support. The second finding has to do with the negative relationship between the students' expressions of self-doubt in their essays and their interest in the writing task (See the loadings on Factor Three). Again, the results of this study suggest that if the students' self-doubt can be decreased by means of providing appropriate forms of instructional support, their interest in the task should be increased.

In short, for the high school students in this study writing on the topics of toxic waste, industrial robots, and product safety, high levels of task-related engagement appear to have been more a function of feeling and being competent with respect to the tasks than of feeling and being in control of the tasks. Whether control opportunities are more important in explaining student writers' task-related engagement when those students already have some predetermined level of perceived and actual competence with respect to the task remains to be seen.

Conclusion

This study should in no way be used to argue against the value of providing students with opportunities to take control of their writing tasks in appropriate ways and at appropriate times. It does, however, suggest that claims made in the literature on writing instruction about the ubiquitously positive effects of ownership (or control) opportunities on students' levels of engagment with their academic writing tasks overlook the critical

role of instructional support in explaining students' writing-task engagement. As long as the theoretical construct of ownership is operationalized as topic choice, writing theorists are likely to continue overestimating the effects of control opportunities on students' levels of engagement with their writing tasks. Afterall, students who choose their own writing topics are almost certainly choosing topics they feel capable of addressing successfully. If ownership is conceptualized more broadly as opportunities to control at least some dimensions of a writing task (of which topic is just one), then the role of instructional support in explaining students' task-related engagement should become more evident. When a writing topic or task is a familiar one, then the opportunity to take control of the task is likely to be paramount in promoting students' engagement with that task. On the other hand, when the writing task is a challenging and unfamiliar one, then students are likely to be more responsive when the level of instructional support is high and the need to take control of the task is minimized or delayed until the students feel more comfortable addressing the demands of both the topic and task.

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Appendix A

Directions and sample items from the instruments used to collect students' self-efficacy, topic knowledge, and responses to the instructional/writing episodes.

Instructions

This questionnaire will ask for two types of information. First, you will be asked whether you think you can do a certain writing task. Answer by circling yes or no in the Can Do column. Then, for those tasks you answered "yes" to, rate how confident you are that you can perform the task. Answer by selecting a number between 10 and 100 using this scale.

10-----20-----30-----40-----50-----60-----70-----80-----90-----100

not very confident — somewhat confident — completely confident

Writing Essays for School

Task	Can Do	Confidence
After reading a 3-5 page magazine article, write an essay summarizing that article,		
receiving a "C" or better	Yes / No	_____
receiving a "B" or better	Yes / No	_____
receiving an "A" or better	Yes / No	_____
Write an essay that persuades people who disagree with you to change to your point of view,		
receiving a "C" or better	Yes / No	_____
receiving a "B" or better	Yes / No	_____
receiving an "A" or better	Yes / No	_____

(appendix continues)

My Thoughts and Feelings About Writing This Essay

We are interested in your thoughts and feelings about writing this essay. Below you will see a list of words that look like this:

Good _____:_____:_____:_____:_____:_____:_____ Bad

If you feel very good about writing the essay, place an X near good:

Good _____:_____:_____:_____:_____:_____:_____ Bad

If you feel very bad about writing the essay, place X near bad:

Good _____:_____:_____:_____:_____:_____:_____ Bad

If you don't feel either very good or very bad about writing the essay, place an X closer to the middle but toward the side you favor.

IMPORTANT
1. Place your X in the center of spaces, not on the boundaries.
2. Be sure you mark an X for every word pair.
3. Make only one X on a word pair.

Content	_____:_____:_____:_____:_____:_____:_____	Discontent
Unpleasant	_____:_____:_____:_____:_____:_____:_____	Pleasant
Mad	_____:_____:_____:_____:_____:_____:_____	Glad
Enjoyable	_____:_____:_____:_____:_____:_____:_____	Distasteful
Like	_____:_____:_____:_____:_____:_____:_____	Dislike
Worthless	_____:_____:_____:_____:_____:_____:_____	Valuable
Joyous	_____:_____:_____:_____:_____:_____:_____	Depressed
Bored	_____:_____:_____:_____:_____:_____:_____	Excited
Bad	_____:_____:_____:_____:_____:_____:_____	Good
Unfair	_____:_____:_____:_____:_____:_____:_____	Fair
Frustrated	_____:_____:_____:_____:_____:_____:_____	Satisfied
Interesting	_____:_____:_____:_____:_____:_____:_____	Dull
Worst	_____:_____:_____:_____:_____:_____:_____	Best
Happy	_____:_____:_____:_____:_____:_____:_____	Angry

Table 1

Rotated Factor Loadings for Students' Responses to the Semantic Differential

Items on Semantic Differential	Factors	
	Feelings	Interest
content	.53	.56
unpleasant	-.63	-.46
mad	-.76	-.24
enjoy	.58	.60
like	.49	.67
worthless	-.32	-.74
joy	.65	.37
bored	-.24	-.83
bad	-.69	-.48
unfair	-.77	-.21
frustrated	-.71	-.35
interesting	.24	.80
worst	-.62	-.48
happy	.80	.26
delight	.75	.33
easy	.56	.12
fascinating	.19	.84

(table continues)

	Ownership and Instructional Support	
negative	<u>-.62</u>	-.42
grief	<u>-.78</u>	-.25
joyous	<u>.73</u>	.32
Proportion of Variance Explained	.56	.08

Table 2

Rotated Factor Loadings for Nine Outcome Variables

Outcome Variables	Factors		
	Persistence	Attentiveness	Self-doubt
Reading/Writing	.01	.92	-.07
Thinking/Reflecting	.16	-.89	-.11
Time	.92	-.12	-.13
Length	.93	-.05	-.07
Feelings	.22	.03	.14
Interest	.28	.24	-.44
Function	-.07	.05	-.22
Doubt	.03	-.05	.83
Opinion	-.08	.18	.48
Variance Explained	.24	.21	.12

Table 3

Means and Standard Deviations for Three Factors Representing Nature and Extent of Students' Engagement with Their Writing Tasks

			FACTOR ONE Persistence		FACTOR TWO Attentiveness		FACTOR THREE Self-doubt	
Teacher	Efficacy	Instruction	M	(SD)	M	(SD)	M	(SD)
Bob	Low	None	-78.3	(51.3)	77.0	(49.5)	07.9	(84.8)
	(n = 7)	Lecture	-21.2	(69.1)	-62.9	(133.0)	18.4	(159.3)
		PReP	05.3	(34.3)	15.9	(81.3)	69.9	(151.5)
	Mid	None	-82.3	(39.3)	36.5	(92.8)	08.1	(109.9)
	(n = 12)	Lecture	-20.8	(74.4)	36.7	(105.5)	-41.0	(42.0)
		PReP	-21.0	(73.9)	21.9	(77.8)	-07.9	(73.4)
	High	None	-89.9	(34.0)	10.4	(102.4)	116.0	(169.0)
	(n = 10)	Lecture	-49.1	(28.5)	31.4	(83.8)	-28.6	(61.3)
		PReP	-62.5	(43.0)	37.8	(74.5)	01.8	(87.3)
Rich	Low	None	33.4	(70.9)	39.6	(79.0)	17.7	(107.9)
	(n = 6)	Lecture	43.6	(129.4)	-27.1	(99.4)	-56.9	(36.5)
		PReP	29.6	(74.0)	-79.4	(74.7)	44.9	(142.8)
	Mid	None	-08.6	(117.2)	37.5	(90.7)	-37.2	(55.6)
	(n = 6)	Lecture	27.7	(127.6)	16.3	(109.0)	-26.6	(72.3)
		PReP	12.7	(94.8)	20.4	(78.9)	-20.1	(62.2)
	High	None	15.0	(104.1)	06.0	(88.2)	32.4	(131.6)
	(n = 10)	Lecture	59.9	(103.6)	-92.6	(112.0)	-28.1	(103.7)
		PReP	14.3	(94.8)	-49.7	(129.9)	-44.9	(90.3)
Carry	Low	None	-02.0	(56.8)	78.2	(69.3)	112.1	(133.2)
	(n = 6)	Lecture	95.8	(105.0)	-52.2	(48.4)	-23.2	(52.7)
		PReP	03.5	(56.4)	17.0	(84.3)	02.6	(111.8)
	Mid	None	-63.3	(33.0)	-07.1	(124.2)	06.2	(51.5)
	(n = 4)	Lecture	153.8	(125.1)	-13.0	(52.8)	-16.7	(37.8)
		PReP	-20.8	(58.2)	-134.5	(113.2)	-16.8	(35.4)
	High	None	-42.7	(89.6)	06.9	(40.1)	-37.7	(48.0)
	(n = 5)	Lecture	176.5	(124.3)	33.8	(59.5)	-31.2	(52.3)
		PReP	13.6	(42.5)	-6.5	(142.3)	-20.4	(54.1)

Table 4

Summary Table for Repeated-Measures ANCOVA

		Persistence			Attentiveness			Self-doubt		
	df	MS	F	p	MS	F	p	MS	F	p
SOURCE										
Between										
Teacher	2	1361.31	11.99	.001	300.95	2.63	.081	184.53	1.17	.317
Efficacy	2	22.01	0.19	.824	5.85	0.05	.950	237.50	1.51	.230
T x E	4	54.67	0.48	.749	220.33	1.93	.119	59.78	0.38	.822
Covariate	1	127.81	1.13	.293	98.74	0.86	.357	38.87	0.25	.621
Error	56	113.54			114.42			157.27		
Within										
Instruction	2	1130.49	31.28	.001	460.37	6.19	.003	350.47	4.97	.009
I x T	4	358.51	9.92	.001	46.09	0.62	.649	21.29	0.30	.876
I x E	4	47.98	1.33	.264	188.83	2.54	.044	86.32	1.22	.305
I x E x T	8	27.63	0.76	.635	110.32	1.48	.171	141.15	2.00	.053
Covariate	1	216.18	5.98	.016	19.94	0.27	.606	2.23	0.03	.859
Error	113	36.14			74.35			70.56		

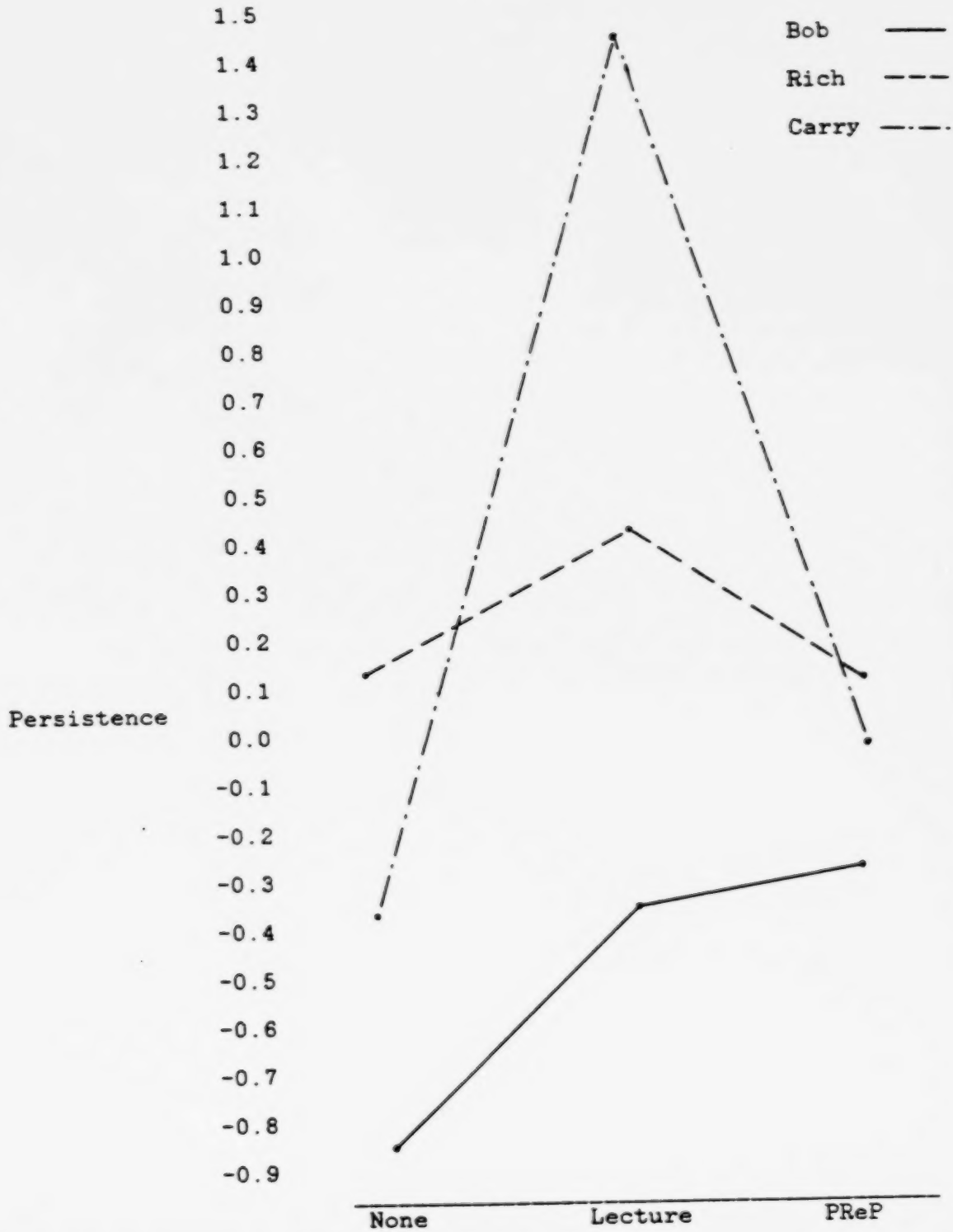

Figure 1. Instruction x teacher interaction on the students' persistence while writing essays.

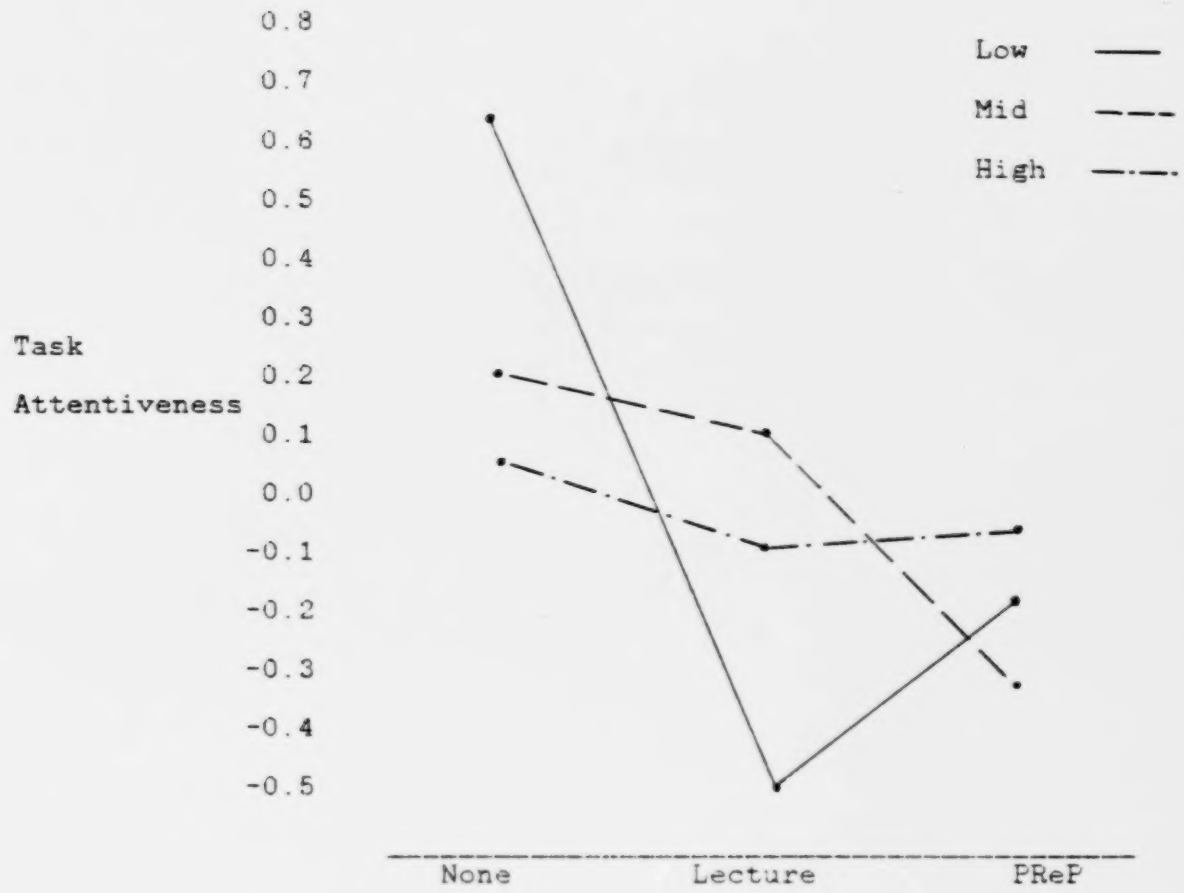

Figure 2. Efficacy x instruction interaction on students' task attentiveness while writing. (A low score indicates a high proporation of thinking/reflecting behaviors.)